

ARCS PROCEDURE:	SMET WIND DIRECTION CALIBRATION (CALC)	PRO(WND)-004.004 11 February 2002 Page 1 of 2
Author: J. Zirzow		

SMET Wind Direction Calibration (CALC)

I. Purpose:

The purpose of this procedure is to describe the steps performed by the RESET team to check and possibly calibrate the wind direction sensors at ARCS. **Note: this procedure is performed as part of the SMET logger calibration procedure PRO(DAQM)-005.**

II. Cautions and Hazards:

- If the wind direction sensor is brought down from the wind tower, at least two trained persons are required and take care not to be struck by the tower or weighted mount.
- Do not perform this procedure if lightning is observed or expected.

III. Requirements:

- Perform this procedure during each RESET team visit to the ARCS sites.
- Compass.
- Direction Vane Angle Fixture.

IV. Procedure:

A. Steps:

While conducting this procedure, log serial numbers, reference bracket and measured angles on Excel-formatted calibration forms.

1. Observe orientation of the anemometers on the tower.
2. Compare datalogger output with compass reading.
3. If the orientation agrees with indicated wind direction by more than ± 5 degrees, log difference, and stop.
4. Otherwise, lower tower and orient anemometer vertically.
5. Remove the Wind Monitor and place the Vane Angle Fixture on the orientation ring. **Important: Do not loosen or adjust lower orientation ring with notch for sensor unless initial orientation to North is incorrect.**
6. Replace Wind Monitor on the Vane Angle Fixture.
7. Engage the indexing pins in the notches and tighten the clamps. Also attach holding arm to the fixture.

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8. Connect a notebook PC to the SMET datalogger using the RS232/EIA422/Impulse adapter.
9. Step through the ZENO menus (“U”, “T”, and “Scaled”).
10. Use the Vane Angle Fixture to position the vane at 30 degree increments (except 360 degrees where there can be a 1 to 5 degree dead Zone) .
11. The ZENO reports wind directions within ± 5 degrees of the Vane Angle Fixture settings. (If the instrument fails, replace sensor and try again. If it fails again, contact mentor and consider a voltage calibration of ZENO Datalogger. See PRO(DAQM)-005).
12. Remove the Wind Monitor and Vane Angle Fixture.
13. Place the Wind Monitor on the orientation ring and engage the orientation ring indexing pin in the notch at the instrument base.
14. Tighten the mounting post band clamp.
15. Record any changes or comments in the site data log.

V. References:

1. Hart, R.: "Element Operations and Maintenance Development Outline," Argonne National Laboratory," 1995.
2. Young Company,: "Wind System Calibration," 1994.

VI. Attachments:

None.